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STUDENT REPORT

PEARL HARBOR: STRATEGY AND PRINCIPLES OF WAR

Major Robert J. Isaman 85-1305

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<p>Presents an analysis of the Japanese attack on Pearl Harbor to be used in developing programs of instruction for the Air Command and Staff College at the Air University. Chapter One provides a brief biographical sketch of Japanese Fleet Admiral Isoroku Yamamoto. Chapter Two consists of the prelude to battle, a battle description, and aftermath of the attack on Pearl Harbor. Chapter Three describes the Japanese strategy process which lead to the attack on Pearl Harbor while Chapter Four presents an analysis of the Japanese application of the principles of war at Pearl Harbor. The paper concludes with a guided discussion format for instructional use.</p>						
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PREFACE

The Japanese attack on Pearl Harbor provided the impetus for the entry of the United States into WWII. Their victory at Pearl Harbor solidified a reluctant and isolationist American population and brought the United States into the war. The historical significance of this battle can serve as a basis for lessons in the art of war. The purpose of this study is to provide an historical analysis of Pearl Harbor for use by the Warfare Studies Division of the Air Command and Staff College (ACSC). This analysis addresses only the Japanese role in the attack on Pearl Harbor. To assist in the comprehension of the historical lessons provided by Pearl Harbor, this study will present a biographical sketch on Admiral Isoroku Yamamoto, a description of the attack on Pearl Harbor, a discussion of the Japanese strategy process, and an analysis of the Japanese application of the principles of war. The final chapter provides discussion questions for use by an ACSC course officer in preparation for a seminar on Pearl Harbor. In the end, this study should contribute to the understanding and comprehension of the art of war.



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Chapter One

YAMAMOTO

Admiral Isoroku Yamamoto is a key figure in the annals of naval history, he was the Admiral Lord Nelson of Japan. Yamamoto gained immortality at the helm of the Combined Fleet. From that position, he orchestrated an impressive string of one-sided victories at the outset of the Pacific war, Pearl Harbor was his most decisive victory. Yamamoto achieved greatness through an extensive knowledge of the United States, advocacy of naval air power, and preeminence within the Imperial Navy. These three attributes will be addressed beginning with how he became an American expert.

Yamamoto acquired expertise on the United States during two tours of duty in this country. His first tour was as a Harvard student attending a two year course of instruction from June 1919 until July 1921. Yamamoto developed a keen interest in air power while at Harvard. He studied volumes of WWI reports on air engagements, visited American aircraft factories, and kept abreast of the latest developments in aviation. The carrier takeoff accomplished from a platform secured to Birmingham and the carrier landing feat of Eugene Ely aboard Pennsylvania were also of particular interest. Yamamoto was also keenly interested in the oil industry. He studied every aspect of the American oil industry as well as touring Mexican oil fields. Yamamoto's second assignment to the United States came in 1925 as the Japanese Naval Attache. While in Washington, Yamamoto devoted on and off duty hours to the

study of American policies, ship building, and defense programs. As Naval Attache and Harvard student, Yamamoto not only became an American expert but a proponent of air power (4:17-20).

Between tours in the United States, Yamamoto broadened his perspective on air power as executive officer for the new Kasumigaura air training center. The tour at Kasumigaura enabled the theorist to also become a practitioner of naval aviation. Aside from earning his wings during off-duty hours, Yamamoto turned a ragtag bunch of prima donnas into a disciplined and cohesive military organization (4:19-20).

Yamamoto applied his expanded expertise on aviation while assigned to the Aeronautics Department of the Navy. One of his accomplishments during the three year tour as head of the Technical Division was to increase production of torpedo and long-range bombers. Yamamoto also exerted tremendous pressure on Japanese industry to design a fast carrier fighter. His efforts resulted in production of the Zero (4:23). Yamamoto continued to espouse air power when he became chief of the Navy's Aeronautics Department. He openly criticized construction of such mammoth battleships as the Yamato and Musashi. Yamamoto believed such ships were obsolete even before their keels were laid and stated the Imperial Navy's future lay in air power (1:88-94; 4:29-30). Yamamoto's position on air power carried weight within the navy.

His influence was based on prestige gained as a delegate to the 1930 and 1934 London Naval Conferences. Yamamoto's influence became increasingly preeminent as Vice-Minister of the Navy and finally CINC Combined Fleet. His initial ascent to power came during the 1930 London Naval Conference. As a junior delegate, he was instrumental in placing light cruisers and submarines outside the parameters of the 1921 Washington Naval Treaty (4:22). The

treaty limited fleet size between the United States, Britain, and Japan to a 5:5:3 ratio. Later as Japan's chief delegate to the 1934 conference, Yamamoto declared the naval ratio a national degradation. He rejected an extension to the Washington treaty and proposed an alternate solution which would have abolish all capital ships and aircraft carriers. Yamamoto reasoned the removal of offensive capability would reduce tensions and the aircraft carrier was the most offensive weapon of all. The London Naval Conference of 1934 marked the sudden emergence of Yamamoto as a figure to be reckoned with in the Imperial Navy. His success in London saved him from an assassination plot at home but his open opposition to the Tripartite Pact while Naval Vice-Minister once again made him the target of the ultranationalists. To save his life, Yamamoto was sent back to the sea as CINC Combined Fleet (1:34-35; 4:24-26, 34-36).

As CINC Combined Fleet, he continued to exert influence by forcing the Naval General Staff to approve his Hawaiian Operation (4:69; 5:297-303). After his string of impressive victories in the Pacific, Yamamoto took the planning initiative away from the Naval General Staff and formulated a plan to capture Midway. He hoped the battle at Midway would deliver the knockout punch required to force a negotiated settlement in the Pacific (4:139-140).

Despite the setback at Midway, Yamamoto's image remained untarnished. The American expert, air power advocate, and preeminent naval figure died a national hero over Bougainville in April 1943. The magnitude of the state funeral and national mourning afforded Yamamoto had occurred only once before in the annals of naval and world history. One hundred and thirty-eight years earlier the British had expressed the same degree of sorrow over the loss of Admiral Lord Nelson at Trafalgar (1:390; 4:303-311).

Chapter Two

PEARL HARBOR: BACKGROUND AND BATTLE DESCRIPTION

The Empire of Japan propelled the United States into WWII on 7 December 1941 with a surprise attack on the U.S. Pacific Fleet in Pearl Harbor. The air raid on Pearl Harbor secured the northern and eastern flanks of the Combined Fleet's Southern Operation just as Admiral Yamamoto had predicted. The Japanese went on to secure one-sided victories in the Dutch East Indies, Singapore, and the Philippines. This chapter will provide background information regarding the prelude to attack, the air raid on Pearl Harbor, and the aftermath of the Japanese victory. Yamamoto began to contemplate the attack on Pearl Harbor shortly after assuming command of the Combined Fleet in mid-August of 1939 (4:36,43,139).

PRELUDE TO ATTACK

As CINC Combined Fleet, Yamamoto was no longer in the political forefront and, well aware of the inevitable course his nation was embarked (see chapter regarding strategy process), he found himself obligated to prepare for the war he had bitterly opposed. He recognized the U.S. Pacific Fleet as Japan's greatest threat and was determined to destroy or neutralize this threat (1:193; 4:xvii). In April of 1940 Yamamoto considered the possibility of an attack on Pearl Harbor as a means to this end. However, he did not really consider the tactic viable until November of 1940 when he received reports on the Royal Navy's successful attack of the Italian Fleet in the shallow

anchorage of Taranto (1:193; 4:53; 5:14). Yamamoto initiated the planning process, for what became known as the Hawaiian Operation, in December of 1940 when he tasked his chief of staff to select a senior flying officer to study all aspects of the problem (4:54).

Rear Admiral Onishi was given the task. Onishi played only a minor role in the initial phase of the Hawaiian Operation; however, his selection of Commander Minoru Genda had a lasting and profound impact on Yamamoto's project. Genda was an experienced air staff officer who shared Yamamoto's belief in the supremacy of naval air power. He joined the project in early February and accomplished the detailed planning for the project which was submitted in draft to Onishi by the end of the month. Onishi added minor amendments to the plan and submitted it to Yamamoto aboard his flagship Nagato on 10 March 1941 (4:54-55; 5:18-20). Genda's draft contained the following basic elements:

1. The attack must catch the enemy completely by surprise.
2. The main objective of the attack should be U.S. carriers.
3. Another priority target should be U.S. land-based planes on Oahu.
4. Every available carrier should participate in the operation.
5. The attack should utilize all types of bombing -- torpedo, dive, and high-level.
6. Fighter planes should play an active part in the attack.
7. The attack should be made in daylight, preferably in the early morning.
8. Refueling at sea would be necessary.
9. All planning must be done in strict secrecy.

Immersed within Genda's plan were a number of problems requiring resolution: securing intelligence, task force organization, pilot training, route selection, refueling at sea, and deception tactics (5:25-29). The solution to each will be discussed beginning with securing intelligence.

Naval Intelligence dispatched Ensign Takeo Yoshikawa to the Hawaiian Consulate in March 1941. His mission was to provide weekly reports on the

day-to-day readiness of the American fleet. This initial tasking had no relationship to the Hawaiian Operation. However, Yoshikawa's observation of American operational routines such as the fleet's weekend return to Pearl Harbor and the poor reconnaissance coverage in Oahu's northern sector were of great value to planners such as Genda. When the Hawaiian Operation became a part of the Navy's military strategy, Yoshikawa was asked to provide more detailed information. On 24 September he was directed to divide Pearl Harbor into five sub-areas and report on the specific anchorage of each vessel within the harbor complex. Yoshikawa's intelligence efforts continued until the outbreak of hostilities. The Pearl Harbor Task Force received his last report at 0200 the morning of 7 December, when Yoshikawa advised the task force of the absence of barrage balloons and torpedo nets (4:58-65; 5:73-77, 248-254, 472-473, 483-484). The task force organization was established on 10 April 1941 with the formation of the First Air Fleet (5:101).

With a revolutionary move in strategic thinking, the Imperial Navy formed the First Air Fleet. Prior to that time, carriers were organized in divisions which augmented surface fleets with air cover. On 10 April 1941 the Navy brought together the First (Akagi and Kaga), Second (Soryu and Hiryu) and Fourth (Ryujo) Carrier Divisions. Admiral Chuichi Nagumo, senior officer in line for command and lacking aviation experience, was selected Commander-in Chief of the First Air Fleet. The Ryujo was transferred to other responsibilities in mid-summer 1941 and the Fifth Carrier Division (Shokaku and Zuikaku) was added to the First Air Fleet in October 1941 (5:101-109,272). However, long before Shokaku and Zuikaku were able to join the fleet, pilot training had begun in Kagoshima Bay.

The First Carrier Division began training for Pearl Harbor under Genda's

supervision in early June 1941. Their practice ground was a harbor in Kagoshima Bay, on the southern island of Kyushu, which closely resembled Pearl Harbor. Genda scheduled torpedo bombing practice first as this phase of the attack required the most work. Genda had the airmen practice releases for a maximum torpedo sinkage of ten meters or thirty-three feet, Pearl Harbor's average depth was forty feet. Torpedo training was later supervised by Lieutenant Commander Murata when he arrived in August of 1941. With the advent of the Model II torpedo, Murata's personnel consistently made accurate torpedo runs with a maximum torpedo sinkage of only 12 meters. Lieutenant Commander Mitsuo Fuchida assumed overall responsibility for flight training following his arrival on 25 August. Fuchida joined the fleet as senior flight commander and ultimately lead the Pearl Harbor attack (5:158-160,195-201,320-323). With the arrival of Fuchida, Genda was able to spend more time planning the attack and route selection became the next task.

Genda provided Nagumo three routing proposals; however, he favored the northern route which was ultimately used, reference figure 1. The northern route had several advantages: the weather conditions provided good concealment enroute; the route was out of the normal shipping lanes between the United States, Canada, and the Soviet Union; and American air patrols were the weakest in the northern sector of Oahu. The northern route's disadvantages were the rough seas and the difficulty such conditions posed for enroute refueling (5:215-220). The refueling problem was eventually resolved by Nagumo's chief of staff Rear Admiral Kusaka.

The immensity of the problem was dramatized by the fact only seven of the task forces ships could make the long northern voyage without refueling - the carriers Kaga, Shokaku, and Zuikaku; the battleships Hiei and Kirishima; and

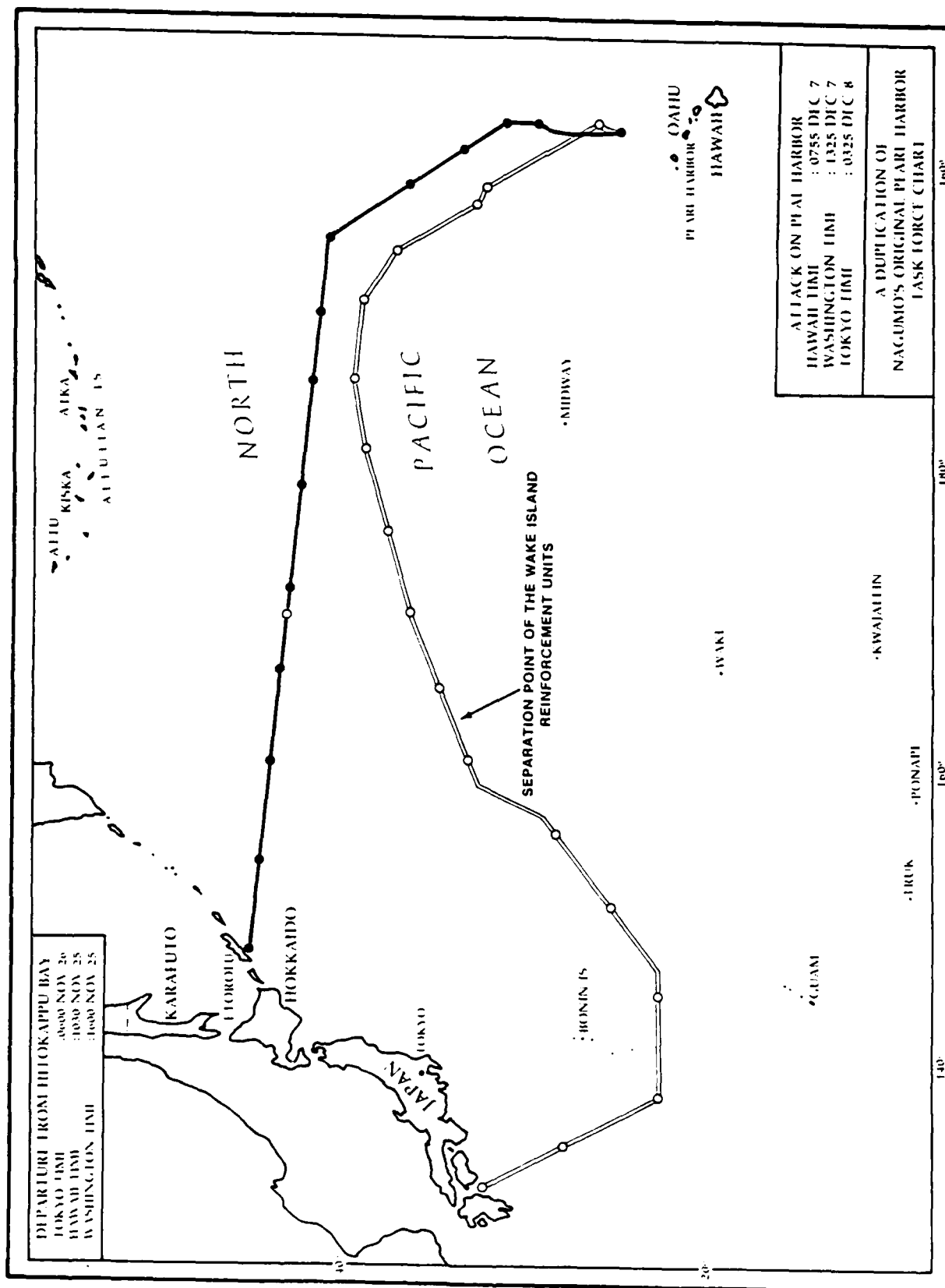


FIGURE 1. NORTHERN ROUTE OF PEARL HARBOR TASK FORCE

Reprinted with permission from At Dawn We Slept: The Untold Story of Pearl Harbor, Anne Prange and Prange Enterprises, Inc., Columbia, Maryland, 1981.

the heavy cruisers Tone and Chikuma, reference table 1 for task force composition. Kusaka solved the problem by first obtaining a Naval Ministry waiver to regulations which prohibited the storage of fuels in vacant spaces aboard ship and then developing a new refueling formation which provided the maximum in maneuverability for all ships during refueling operations (5:322-324). The planning phase was nearly completed and the Hawaiian Operation still faced keen opposition within the Naval General Staff.

Even though the Naval General Staff had allowed the rehearsal of the Hawaiian Operation during the 12-20 September 1941 war games, they had not yet given their approval for its execution (5:223-231). The issue came to a head when two of the First Air Fleet's carriers were assigned to the Southern Operation. Yamamoto sent Captain Kuroshima to Tokyo on 18 October to secure the Naval General Staff's approval for the Hawaiian Operation and to ensure the First Air Fleet would have its full compliment of carriers (5:295-297). Kuroshima was unsuccessful in arguing Yamamoto's case and was forced to use his trump card:

Admiral Yamamoto insists that his plan be adopted. I am authorized to state that if it is not, the Commander-in-Chief of the Combined Fleet can no longer be held responsible for the security of the Empire. In that case he will have no alternative but to resign, and with him his entire staff (5:296-297).

Admiral Nagano, Chief, Naval General Staff approved the attack as he was not about to enter a war with the United States without Isoroku Yamamoto at the helm of the Combined Fleet (1:231; 5:297-300). Deception measures began as Nagumo's ships departed for their home ports and final preparations following the dress rehearsal outside Ariake Bay on 7 November (5:327-338).

Deception was achieved through electronic means and role playing. Electronic deception began when Nagumo's fleet departed Ariake Bay and the naval

CLASS	NAME OF SHIPS	NORMAL OR TRIAL DISPLACEMENT	TOP SPEED	ACTUAL RANGE		RANGE DURING TRIAL RUN		FUEL CAPACITY
AIRCRAFT CARRIERS	KAGA	42,500 TONS	28 KNOTS	18 KNOTS	6,500 NAUT. MILES	16 KNOTS	10,000 NAUT. MILES	8,200 TONS
	AKAGI	41,300 "	31 "	"	"	"	8,000 MILES	6,000 "
	SHOKAKU	29,800 "	34 "	18 "	6,800 "	18 "	9,700 "	5,000 "
	ZUIKAKU	"	"	"	"	"	"	"
	HIRYU	20,250 "	34 "	18 "	5,400 "	18 "	7,600 "	3,500 "
BATTLESHIPS	SORYU	"	"	"	"	"	"	"
HEAVY CRUISERS	KIRISHIMA	36,700 "	29.8 "	18 "	6,800 "	18 "	9,800 "	6,300 "
	HIEI	37,000 "	"	"	"	"	"	"
LIGHT CRUISER	CHIKUMA	14,000 "	35.6 "	18 "	5,600 "	18 "	8,000 "	2,600 "
	ABUKUMA	5,500 "	35 "	14 "	5,000 "	14 "	4,000 "	1,600 "
DESTROYERS	URAKAZE	2,500 "	35 "	18 "	4,000 "	18 "	6,000 "	600 "
	ISOKAZE	"	"	"	"	"	"	"
	TANIKAZE	"	"	"	"	"	"	"
	HAMAKAZE	"	"	"	"	"	"	"
	AKIGUMO	"	"	"	"	"	"	"
	KASUMI	"	"	18 "	3,500 "	18 "	5,000 "	"
	ARARE	"	"	"	"	"	"	"
	KAGERO	"	"	"	"	"	"	"
SUBMARINES	SHIRANUHI	"	"	"	"	"	"	"
	19 IGO	2,600 "	23 "	16 "	14,000 "	"	"	800 "
	21 " 21 "	"	"	"	"	"	"	"
SUPPLY SHIPS	23 " 23 "	"	"	"	"	"	"	"
	KENYO-MARU	"	"	"	"	"	"	"
	KYOKUTO-MARU	"	"	"	"	"	"	"
	KOKUYO-MARU	"	"	"	"	"	"	"
SUPPLY SHIPS	SHINKOKU-MARU	ABOUT 20,000 "	ABOUT 18 "	ABOUT 16 "	9,000 "	"	"	ABOUT 2,000 "
	TOHO-MARU	"	"	"	"	"	"	"
	NIHON-MARU	8,000 "	16 "	14 "	7,000 "	"	"	450 "
	TOEI-MARU	"	"	"	"	"	"	"
NOTE: PREPARED BY REAR ADMIRAL TOMIOKA, FORMERLY CHIEF OF THE OPERATION SECTION OF THE JAPANESE NAVY GENERAL STAFF.							FORMER CHIEF OF OPERATIONS	

TABLE 1. PEARL HARBOR ATTACK FORCE

Reprinted with permission from At Dawn We Slept: The Untold Story of Pearl Harbor, Anne Prange and Prange Enterprises, Inc., Columbia, Maryland, 1981

station on Kyushu began the transmission of false daily radio communications to the First Air Fleet. In the end, the false message traffic confounded the American intelligence picture. A picture further complicated when all service call codes were changed at 0000 on 1 December (5:327-338,353,439-440). The second measure involved sailors from the Yokosuka Naval barracks. The sailors were dispatched to Tokyo in early December to mask the absence of those naval personnel sailing with Nagumo's force (15:29). Meanwhile, Nagumo's force had already sortied from the rendezvous in Hitokappu Bay on 25 November and was enroute to its target through the north Pacific (5:371-372).

The seas of the north Pacific were unusually calm and allowed ships to refuel whenever necessary. The blacked-out force traveled in strict radio silence, blinkers were used for ship-to-ship communications. As Nagumo's force passed silently through the deserted north Pacific, they received coded messages daily from the Naval General Staff. Radio Tokyo also provided a means of getting information to Nagumo (5:390,417,427-428).

Nagumo received his most important message on the morning of 3 December when the Combined Fleet broadcast the briefest yet most historic message in the annals of naval history, "Climb Mount Niitaka, 1208." This established 0000, 8 December (Japan time) as X-Day. The date and time had been selected based on intelligence, forecasted weather conditions, and the evening visibility afforded the task force by the full moon. Nagumo's task force received the message about 940 miles north of Midway, well beyond the arc of American reconnaissance flights (5:285,325,468).

By the morning of 6 December, the fleet was only 600 miles north and slightly west of Oahu. They were within range of Hickam's B-17s but not yet close enough to launch a strike of their own. Following its final refueling

at 0830, the task force turned south for Oahu and the final run to the target. Nagumo's force began the attack at 0550 on the morning of 7 December, when the carriers turned into the wind and the first wave's fighters began the launch at 0610. Within fifteen minutes 183 aircraft were airborne. The second wave started their launch at 0705. Within ninety minutes of the first wave's initial takeoff roll, 351 aircraft were enroute to the unsuspecting enemy (5:490-492). In less than one hour, the Ford Island command center would broadcast, "AIR RAID, PEARL HARBOR. THIS IS NOT DRILL!" (5:517)

AIR RAID: PEARL HARBOR

The air raid was divided into two distinct phases made up of the first and second waves, reference figure 2. Attack profiles were further subdivided by weapon system. Table 2, from Gordon Prange's At Dawn We Slept, provides a clear delineation of the air attack force. The role each weapon system played in the air raid will be described starting with the mission scenario of the first wave lead by Commander Mitsuo Fuchida.

First Wave

Fuchida initiated the attack over the northern tip of Oahu by firing a single flare to indicate complete surprise. The flare signified Murata's torpedo bombers were to initiate the attack, while the Zeros seized control of the air. The element of surprise was important to the torpedomen due to their shallow angle of attack. Their vulnerable attack run was required to ensure minimal torpedo sinkage in the shallow waters of Pearl Harbor. A brief period of confusion occurred when Fuchida fired a second flare to get the attention of the Zeros' flight leader. This caused the dive bombers to assume Fuchida had given the 2 flare signal indicating surprise had not been

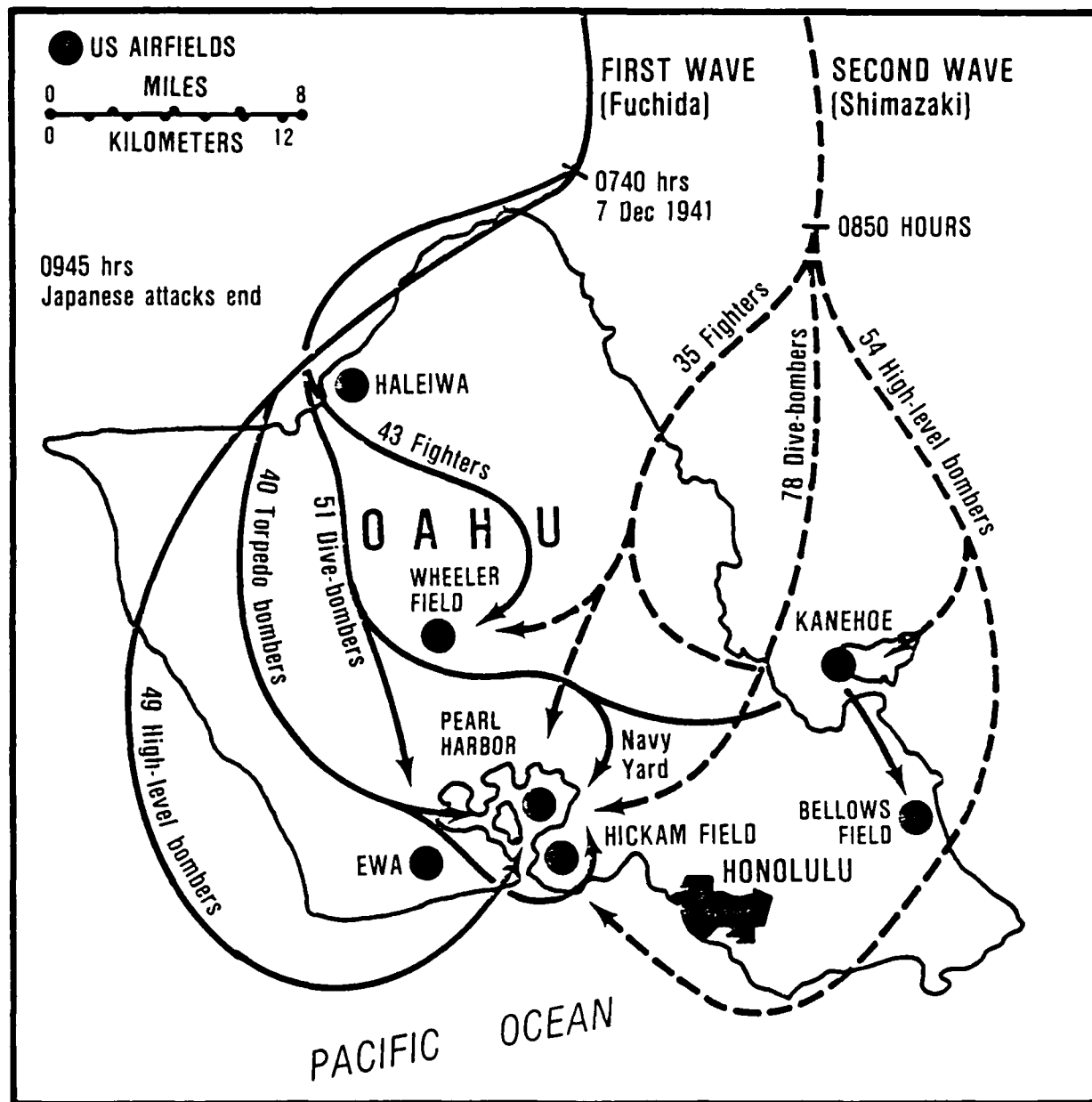


FIGURE 2. FIRST AND SECOND WAVE ATTACK PROFILES

From the book, Pearl Harbor by H.P. Willmott, copyrighted 1983 by Bison Books Corporation. Reprinted by permission of the publisher, Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.

ORGANIZATION OF AIR ATTACK FORCE ON PEARL HARBOR

CLASSIFI- CATION	UNIFIED COMMANDER	AIR ATTACK UNIT	UNIT COMMANDER	FLIGHT AND FLIGHT COMMANDER	ATTACHED CARRIER OF PLANE	TYPE	NUMBER OF PLANES	ARMAMENT	TARGET
AIR ATTACK FORCE ON PEARL HARBOR	COMDR MITSUO FUCHIDA	FIRST ATTACK FORCE	COMDR MITSUO FUCHIDA	1st FLIGHT HORIZONTAL BOMBING FORCE COMDR MITSUO FUCHIDA	AKAGI	97 TYPE	15	ONE 800 KILOGRAM ARMOR PIERCING BOMB	BATTLESHIP
					KAGA		14		
					SORYU		49		
					HIRYU		10		
				1st FLIGHT SPECIAL GROUP TORPEDO FORCE LT COMDR SHIGEMARU MURATA	AKAGI		12	ONE 800 KILOGRAM AIR TORPEDO	BATTLESHIP CRUISER
					KAGA		12		
					SORYU		40		
					HIRYU		8		
				2nd FLIGHT DIVE BOMBER FORCE LT COMDR KAKUICHI TAKAHASHI	SHOKAKU	98 TYPE	26	ONE 250 KILOGRAM LAND TARGET BOMB	17 PLANES FORD AIR BASE 9 PLANES HICKAM AIR BASE WHEELER AIR BASE
					ZUIKAKU		25		
				3rd FLIGHT AIR CONTROL FORCE LT COMDR SHIGERU ITAYA	AKAGI	ZERO TYPE	10	TWO 20 MILLIMETRE MACHINE GUNS	FORD & HICKAM AIR BASE
					KAGA		10		
					SORYU		8	TWO 7 MILLIMETRE MACHINE GUNS	WHEELER & BARBERS POINT AIR BASE
					HIRYU		6		
					SHOKAKU		5	8 PLANES—TWO 230 KG LAND TARGET BOMBS 16 PLANES—ONE 230 KG LAND TARGET BOMB SIX 60 KG ORDINARY BOMBS	HICKAM AIR BASE
					ZUIKAKU		6		
		SECOND ATTACK FORCE	LT COMDR SHIGEKAZU SHIMAZAKI	1st FLIGHT HORIZONTAL BOMBING FORCE LT COMDR SHIGEKAZU SHIMAZAKI	ZUIKAKU	97 TYPE	27	ONE 250 KILOGRAM ORDINARY BOMB	CRUISER BATTLESHIP DESTROYER
					SHOKAKU		27		
				2nd FLIGHT DIVE BOMBER FORCE LT COMDR TAKASHIGE EGUSA	SORYU	98 TYPE	18	TWO 20 MILLIMETRE MACHINE GUNS	FORD & HICKAM AIR BASE
					HIRYU		18		
					AKAGI	ZERO TYPE	18	TWO 7 MILLIMETRE MACHINE GUNS	WHEELER & KANEHOE AIR BASE
					KAGA		26		
				3RD FLIGHT AIR CONTROL FORCE LT SABURO SHINDO	AKAGI		9		
					KAGA		9		
					SORYU		36		
					HIRYU		9		
							9		
							9		
							9		
							9		

AN EXACT TRANSLATION OF COMMANDER FUCHIDA'S ORIGINAL CHART
*TWO FIGHTERS ABORTED IN TAKE OFF

TABLE 2. PEARL HARBOR AIR ATTACK FORCE

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achieved. Under such circumstances, they were to initiate the attack with a strike on Ford Island while the high-level bombers made the first run on Battleship Row. This tactic was designed to divert American antiaircraft fire and allow the torpedo bombers an opportunity to slip in to the target unnoticed. Murata witnessed what had happened and had no choice but to get his torpedo bombers to the target as fast as possible (5:501-503).

Torpedo Bombers. Murata split the torpedo force into two groups over Ewa. One group, under the command of Lieutenant Nagai, proceeded to the west side of Pearl Harbor while Murata took the other group to the southeast and swung north-northwest over Hickam Field for a run on Battleship Row, reference figure 3 (5:505-506).

Nagai's group commenced the attack at 0755 as they bore down on the light cruiser Raleigh and the target ship Utah, reference figure 4. While one flight concentrated on ships in the northwestern sector of Ford Island, reference figures 3 and 4, Nagai lead his group's other flight against ships near the southeastern loch. During this attack, a torpedo destined for the minelayer Oglala passed under the ship and burst against the light cruiser Helena causing damage to both ships (5:506-508). A number of Nagai's pilots also made passes on the more lucrative targets along Battleship Row. This was the primary target area of Murata's group, reference figure 3.

Murata's group laid siege to West Virginia on their first pass as well as Oklahoma and Vestal. A torpedo destined for Vestal passed under the smaller vessel and literally blew the bottom out of Arizona (5:509). Murata's group also made runs on Nevada and California. Nevada took a single hit at 0803 which tore a huge hole in the ship's bow. This caused a number of forward compartments to flood as the ship began a list to port. Counter-flooding

**TORPEDO ATTACK PLAN AGAINST SHIPS MOORED AROUND FORD ISLAND
REPRODUCED FROM FUCHIDA'S ORIGINAL CHART**

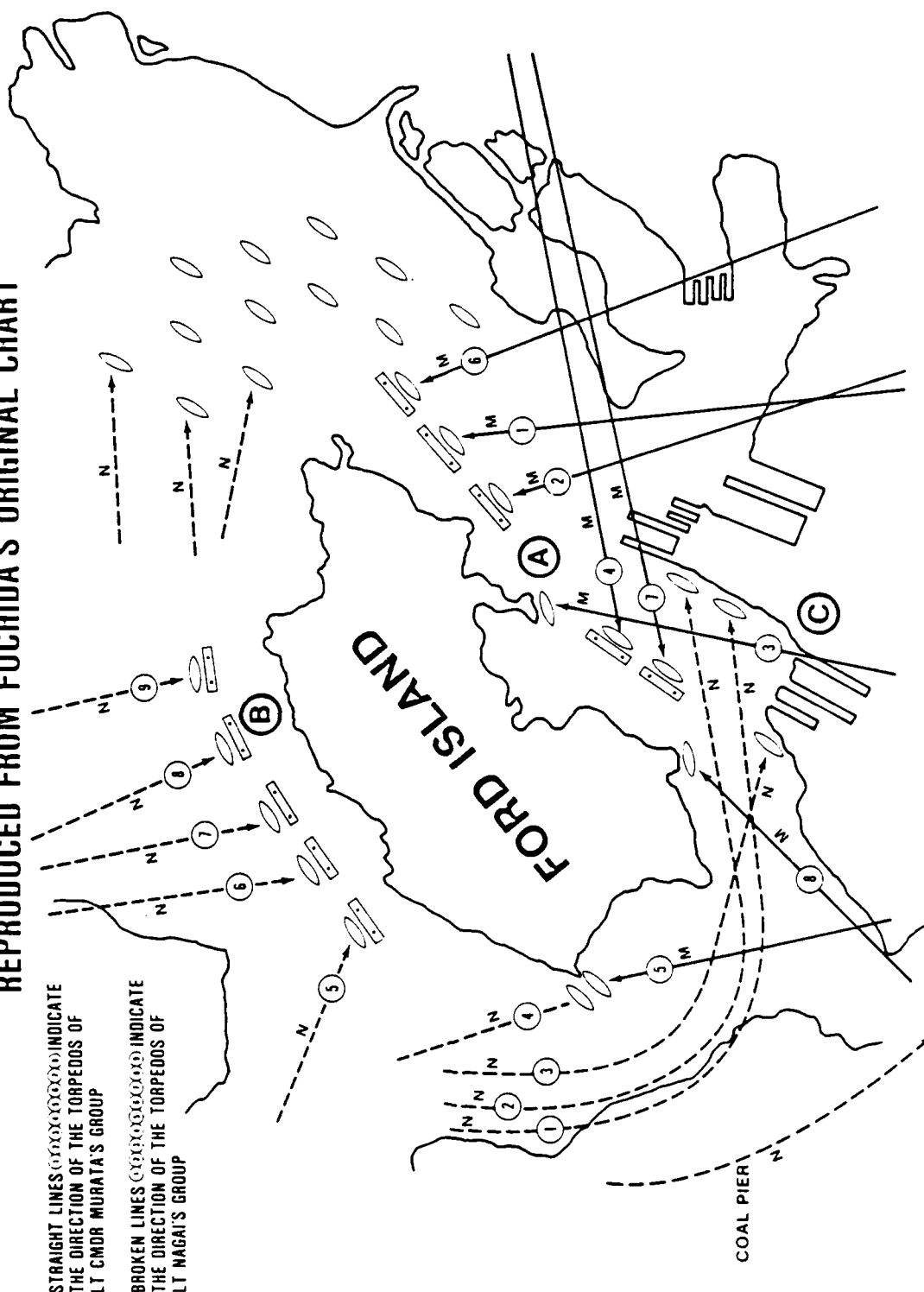


FIGURE 3. TORPEDO BOMBER ATTACK PLAN

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eventually saved the vessel. Prompt counter-flooding also saved California following two hits in rapid succession. Murata's torpedomen inflicted significant damage, the most significant of which occurred to Oklahoma. Oklahoma was hit by three torpedoes during the initial pass. A fourth hit caused her to roll over on her side. The roll continued until only the bottom of the once-great vessel could be seen (5:510-515). Surprise provided Murata's torpedo bombers the edge they needed.

Surprise enabled the torpedomen to fly the low, straight-in flight profile required to get torpedoes on target. The torpedo bomber was a lucrative target for American antiaircraft guns and five of the first wave's forty torpedo bombers were lost. Following the first pass on target, their only hope was the enemy gunners would be distracted by the concurrent dive bomber attack over Ford Island and the high-level bomber's attack from overhead (5:501-503,515).

High-level Bombers. Fuchida's high-level bombers began their attack by concentrating on the inboard ships along Battleship Row, reference figure 5. Sheltered from the onslaught of Murata's torpedomen, Maryland, Tennessee, and Arizona were the bomber's primary targets. Maryland was effectively screened by the ill-fated Oklahoma and sustained little damage. Tennessee and Arizona did not fare as well (5:510-511,537).

Tennessee survived the initial onslaught of three bombers as their bombs erroneously detonated on West Virginia. Tennessee was eventually hit by two 800 kilogram bombs; however, these bombs caused minor damage in comparison to that sustained from the debris of Arizona's devastating blow (5:510-514).

One 800 kilogram bomb eventually struck Arizona beside the number two turret and detonated in the forward magazine. Almost 1,000 men perished as,

HIGH LEVEL BOMBING ATTACK PLAN AGAINST BATTLESHIPS MOORED SINGLY IN BATTLESHIP ROW REPRODUCED FROM FUCHIDA'S ORIGINAL CHART

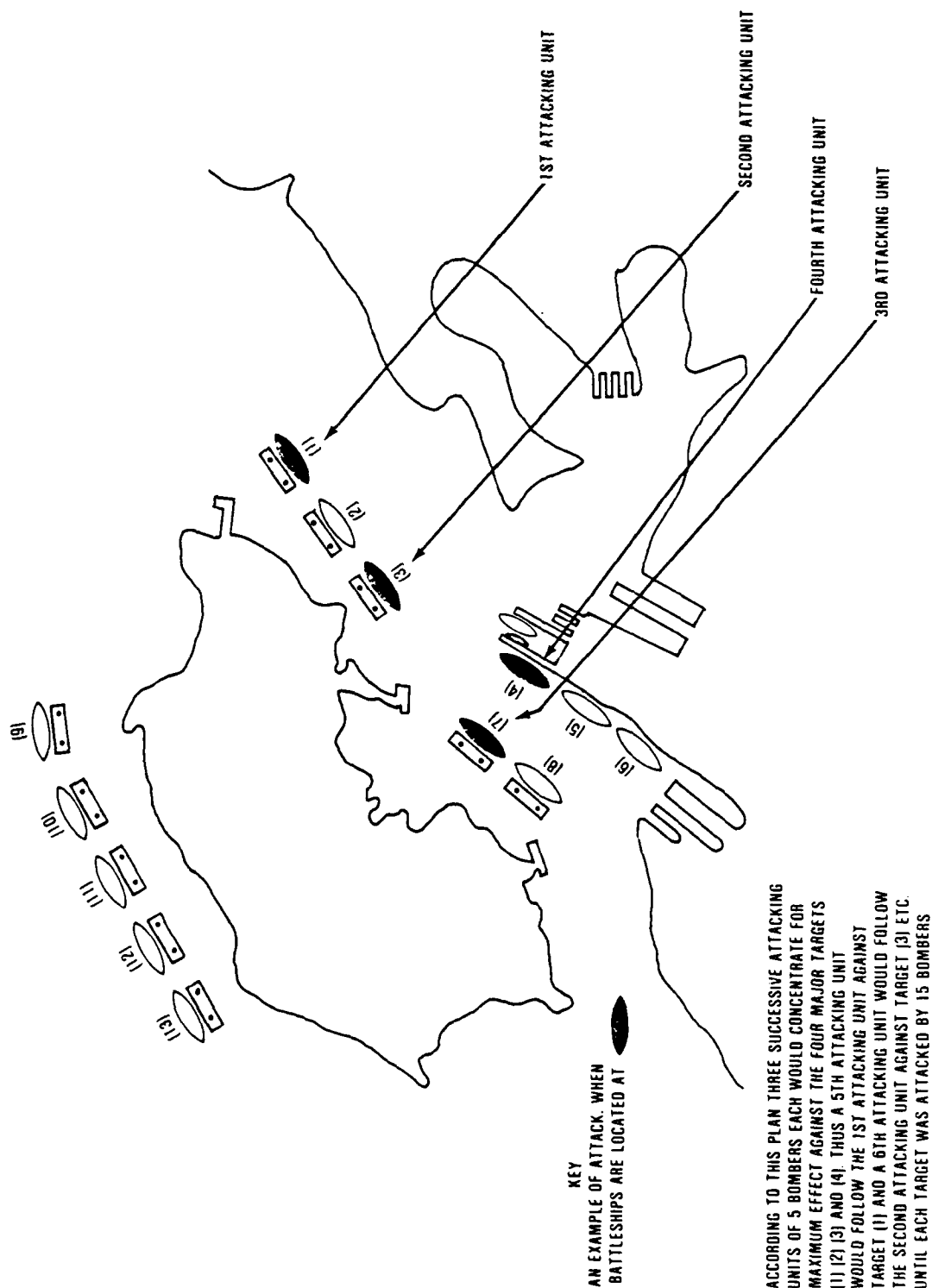


FIGURE 5. HIGH LEVEL BOMBER ATTACK PLAN

Reprinted with permission from *At Dawn We Slept: The Untold Story of Pearl Harbor*, Anne
Prange and Prange Enterprises, Inc., Columbia, Maryland, 1981

"the ship sunk like an earthquake had struck it." (5:513) The concussion from the explosion put out fires on Vestal as well as causing the damage to Tennessee (5:509, 513-514). The Pacific Fleet sustained significant damage through the combined efforts of the torpedo and high-level bombers. The American fleet's antiaircraft guns provided its only protection as Japanese dive bombers and Zeros maintained air superiority over Oahu.

Dive Bombers and Zeros. The first wave's dive bombers and Zeros were able to neutralize American air power on the ground and gain air supremacy over Oahu. They attacked six of Oahu's seven military airfields, reference figure 2, and encountered little resistance in their efforts. Kaneohe Field was actually the first site on Oahu to come under attack when Zeros swooped down at 0748, seven minutes before Murata's torpedo bombers initiated their attack (5:501,519).

In 1941, Kaneohe was primarily a seaplane base with 36 PBVs and a few miscellaneous aircraft. The Zeros were almost unopposed in their strike due to a lack of antiaircraft batteries, machine gun fire provided the only obstacle. The Zeros strafed PBVs moored in the bay and on the beaching ramp, they left a sea of flames in their wake (5:519; 8:207-209).

Figure 2 depicts elements of this group moving on to Bellows following the devastation of Kaneohe; however, sources indicate the only attack made on the small Army airfield by the first wave was the strafing run of a single Zero. The warning provided by this aircraft allowed the base to disperse the 6 O-47s, 2 O-49s, and 12 P-40s assigned (2:57; 5:529). Wheeler on the other hand was not as fortunate.

Wheeler was one of Oahu's key airfields with 43 modern P-40s and 39 obsolete P-36As assigned. Wheeler's fighters were lined up in front of the

hangers and under armed guard. The ammunition belts had also been removed and stored in the hangers. Lieutenant Sakamoto's group of 25 dive bombers could not have asked for more as they swooped down on Wheeler turning it into a sea of flames. Wheeler, like Kaneohe, was unprepared to put up much of a struggle. The field was without antiaircraft guns or interceptors (5:523). Further south, dive bombers were pounding Hickam Field and Ford Island.

The dive bombers descended on Hickam and Ford Island only minutes after Murata's torpedo bombers made their first run on Battleship Row. Their first bombs landed in Ford Island's hanger area at 0757. Ford Island was eventually "burning like a forest fire." (5:518) Scarcely a plane remained undamaged. The fire brigade was handcuffed because of the island's broken water mains. When the forward magazine exploded on Arizona, she sank right across Ford Island's water mains. While the battle raged over Ford Island, 19 SBDs from Enterprise arrived on the scene only to be greeted by Zeros. The SBDs were dodging Zeros and American antiaircraft fire while attempting to land at Ford Island and Ewa Marine Air Station (5:511,517-520). The situation at Hickam Field was equally inhospitable.

A flight of 12 B-17s destined for Hickam arrived in much the same manner as Enterprise's SBDs. The B-17s spread out all over Oahu attempting to find a place to land while avoiding Zeros and friendly fire. The B-17s on Hickam's ramp also took a beating as dive bombers and Zeros made run after run against the flying fortresses. The dive bombers also took out Hickam's firehouse and in so doing, ruptured the water mains. The dive bombers and Zeros turned Hickam, Ford Island, Wheeler and Kaneohe into blazing infernos (5:522). Ewa Field suffered a similar fate.

A large group of Zeros were the first to attack Ewa Field. The Zeros

made numerous strafing runs setting fire to almost half the field's aircraft before the dive bombers arrived. In the end, Ewa lost 35 of 51 assigned aircraft (5:524). The dive bombers and Zeros fared much better.

Air-superiority was attained over Oahu at the modest cost of one dive bomber and three Zeros. The Japanese paid little attention to ground forces and army installations not associated with air power. They cleared the skies of the enemy and allowed the torpedo and high-level bombers unimpeded access to Pearl Harbor. They also paved the way for Shimazaki's second wave (5:525-526).

Second Wave

Lieutenant Commander Shimazaki's second wave consisted of 167 aircraft. They were about halfway to Oahu when Fuchida cried, "Tora, Tora, Tora." The second wave's air order of battle was different than the first in that the high-level bombers and Zeros were responsible for maintaining air-superiority while the dive bombers, with their lighter 250 kilogram bombs, were to concentrate on the ships in Pearl Harbor. The comparative lull in activity which occurred at about 0825 soon ended when Shimazaki deployed his forces and commenced the attack at 0855 (5:530-532; 15:20).

Zeros. The Zeros were the first to attack and were divided into two groups. The first group, consisting of 18 aircraft, turned back toward the northeast and headed for Kaneohe and Bellows. The second group, made up of 17 aircraft, continued south to Hickam and Ford Island. The Kaneohe group was further divided into subgroups of nine aircraft. One subgroup strafed the float plane installation and then turned west to machine-gun Wheeler Field while the other subgroup continued southward to Bellows (6:532).

This was the first full scale attack against Bellows. As Bellow's P-40s

were trying to get airborne, a fight of Zeros swooped down. The first P-40 took off at 0900 but six Zeros immediately took him out of action. Two more P-40s attempted to get airborne and met a similar fate. One was halted before he could even get off the ground while the other was hit shortly after take-off and crashed into the sea. Bellow's pilots were not as fortunate as two lieutenants from Haleiwa Field (2:120,154; 5:533-534).

Lieutenants Welch and Taylor were able to get two P-40s off Haleiwa Field and provide some form of resistance. They shot down four aircraft before forced to land at Wheeler for ammunition and fuel. They almost suffered the same fate as the Bellow's P-40s but were able to get airborne and account for three more Japanese aircraft. Aside from the minimal resistance Welch and Taylor provided, the air bases of Oahu were continually drenched with gun fire from Zeros. The Zeros softened them up for Shimazaki's high-level bombers (2:153-154; 5:538).

High-level Bombers. Shimazaki divided a force of 44 bombers into two groups. Shimazaki lead the Sixth Group against Hickam while Lieutenant Tatsuo lead 18 of the Seventh Group's aircraft against Ford Island. The remainder of the Seventh Group aircraft worked over Kaneohe (5:530).

As the Zeros departed Kaneohe for attacks on Wheeler and Bellows, the bombers of Seventh Group moved in. By the time they were finished, six of Kaneohe's 36 PBVs were damaged and 27 were destroyed. Only the three PBVs on patrol fights escaped. Shimazaki's bombers experienced similar success at Hickam Field (5:533-534).

Kaneohe's defenders provided little resistance due to a lack of anti-aircraft guns; however, the situation over Hickam Field was much different. The sky was covered with heavy flak by the time the second wave arrived. Despite

the flak, Shimazaki's bombers were able to make direct hits on Hangers 13 and 15. The role of the second wave's high-level bombers, like its dive bombers, was to mop-up whatever the first wave left behind (5:534).

Dive Bombers. The dive bombers divided into 4 groups of 7 to 8 aircraft before commencing the attack on Pearl Harbor. The mop-up action at Pearl Harbor was complicated by heavy flak and reduced visibility. Heavy rolls of black smoke over Battleship Row made target identification difficult. As a result, the dive bombers concentrated on targets within the dock area around the southeastern loch as well as any targets of opportunity clear of the smoke. Nevada became a prime target as she made way in an attempt to avoid the threat presented by the burning fuel oil on the waters of Battleship Row (5:515,530).

Nevada was attempting to clear the harbor as the dive bombers descended overhead. The Japanese were offered the dual opportunity of chalking up another battlewagon and blocking the harbor's entrance. On their first pass, the dive bombers scored five hits in the vessel's forward section. As Nevada became engulfed in another hail of bombs, she was forced to run aground on Hospital Point. Good visibility on the west side of Ford Island also allowed the dive bombers to put Raleigh in their sights (5:515,535). Raleigh sustained two hits at 0908. She was already in bad shape from the first wave's torpedo attack and nearly capsized when hit by the two 250 kilogram bombs. While Raleigh's crew struggled to keep her upright, ships in the southeastern loch, reference figure 4, were also taking a beating (5:537-538).

Of the ships in the southeastern loch, Honolulu, St Louis, and Pennsylvania received only minor damage compared to Shaw, Cassin, and Downes. Shaw's forward magazine took a direct hit, the explosion which followed ripped her

whole bow off. Meanwhile, Cassin and Downes came under heavy attack and their crews were forced to abandon ship. The magazines of Cassin and Downes caught fire and the explosions shook both ships. Eventually, Cassin rolled over against Downes. Once the dive bombers had emptied their racks, they strafed Ewa, Hickam, and Ford Island before returning to the carriers. In the waning moments of the attack, a single bomber remained overhead Pearl Harbor (5:537-538).

Fuchida circled Pearl Harbor assessing damage and overall mission effectiveness, reference figure 6. As he finished tabulating the results, the last of the rear guard fighters winged out of sight. Finally, he turned toward Akagi and proceeded to his debriefing with Nagumo (5:539).

AFTERMATH

The Japanese Imperial Navy achieved a great victory at Pearl Harbor. As Fuchida touched down on Akagi's deck, Nagumo was about to be presented with an opportunity he was ill-prepared to exploit. Had Yamamoto commanded the Pearl Harbor Task Force, the course of the ensuing war may well have been altered at the outset.

Before reporting to Nagumo, Fuchida correlated his observations with those of the debriefed flight commanders. Genda, Kusaka, and Oishi were present for Fuchida's debriefing. Fuchida presented a detailed description of the attack force's mission effectiveness. The results were impressive (5:542).

Nagumo's attack force achieved a great-victory at Pearl Harbor. American losses were significant even though Kimmel's aircraft carriers had escaped the attack, 18 ships were either sunk or seriously damaged. Lost were the

of the Japanese Air Attack against Pearl Harbor
December 7, 1941 (From Fuchida's original map)

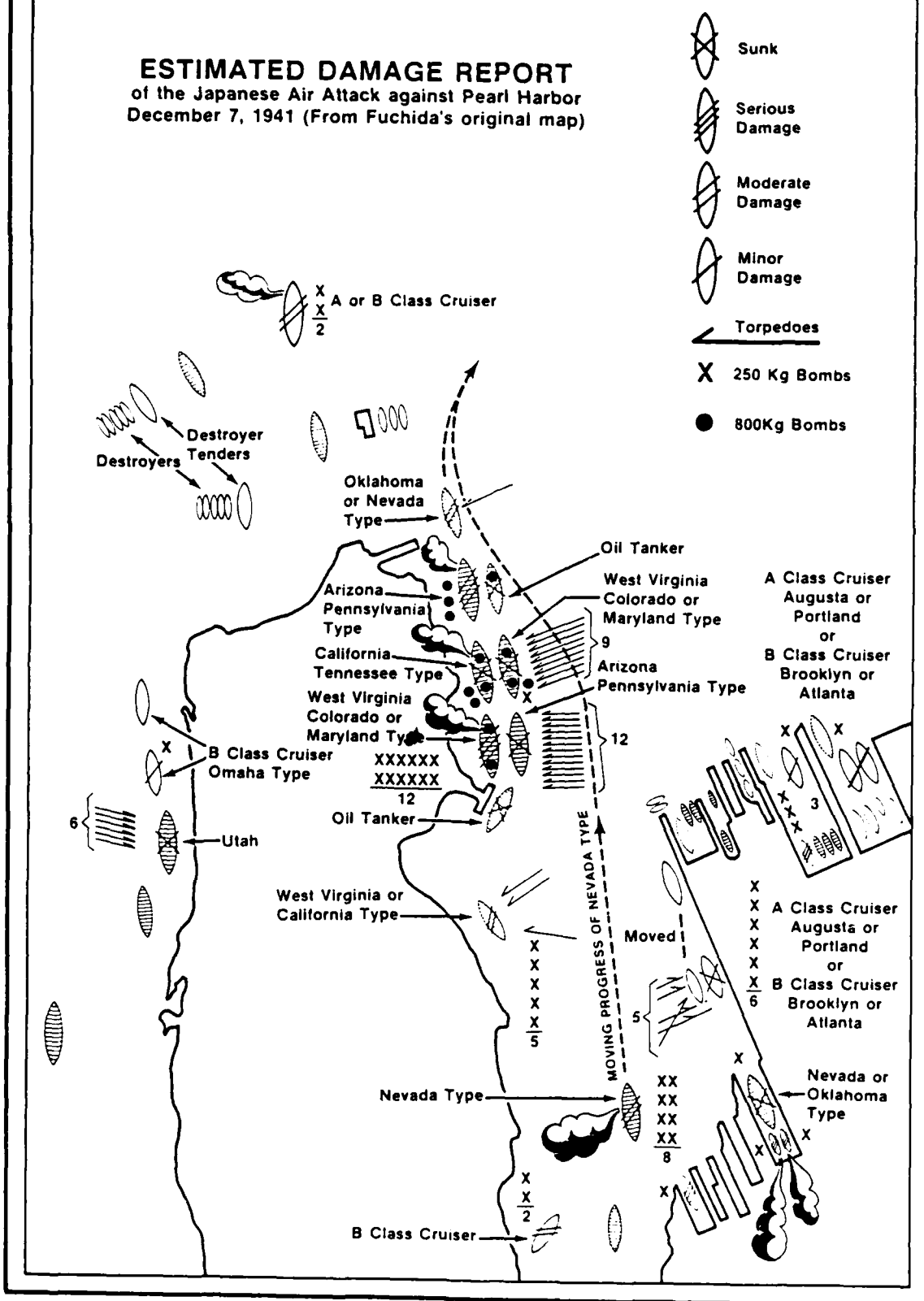


FIGURE 6. FUCHIDA'S POST STRIKE REPORT

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battleships Arizona and Oklahoma, target ship Utah, destroyers Cassin and Downes. Ships which were sunk or beached but later salvaged included the battleships West Virginia, California, and Nevada; and the mine layer Oglala. The battleships Tennessee, Maryland, and Pennsylvania; cruisers Helena, Honolulu, and Raleigh; destroyer Shaw; seaplane tender Curtiss; and repair ship Vestal all received varying degrees of damage. Of Oahu's 394 military aircraft, 188 aircraft were destroyed and 159 received serious damage. American casualties were even more staggering. The total number killed or missing was 2,403, nearly half were lost when Arizona sustained her fatal blow. Surprise, on the other hand, significantly limited the Japanese losses. Fuchida's force lost only 29 of 351 aircraft, most of which were lost during the second wave's attack. The Japanese also sustained only 55 casualties (2:220; 5:539; 11:29). The attack was a great success and presented Nagumo the opportunity for an even greater victory.

Nagumo had opposed a second strike from the outset and was on the defensive against the likes of Genda, Fuchida, and Kusaka. They all supported a second strike initiative. Fuchida felt the next attack should concentrate on the dockyards, fuel tanks, and undamaged ships. Genda, on the other hand, still hoped to confront the American carriers and destroy Japan's primary threat. Unsure of the location of the enemy's carrier force or the strength of Oahu's remaining defenses, Nagumo headed home to Japan confident he had accomplished the mission. Despite Yamamoto's displeasure with Nagumo's decision and that of Yamamoto's staff, he refused to countermand Nagumo's decision (1:265; 4:123; 5:541-550). Had Nagumo made a mistake? One eminent American admiral believed Nagumo had indeed made a mistake.

Admiral Chestor Nimitz put it this way, "The fact that the Japanese did

not return to Pearl Harbor and complete the job was the greatest help to us, for they left their principle enemy with the time to catch his breath, restore his morale, and rebuild his forces." (3:18) Admirals Kimmel and Nimitz both felt the Japanese should have returned to destroy the oil fields, 4,500,000 barrels of fuel oil stored above ground, and dockyards. The Pacific Fleet would have been forced to withdraw to the coast with the loss of such vital resources. By turning back, Nagumo probably committed the single most strategic error of the Pacific war. Instead of a monumental victory on a scale too grand to contemplate, Nagumo's forces had only kindled the flames which ultimately consumed Japan (5:548-550).

Chapter Three

JAPANESE STRATEGY PROCESS

The attack on Pearl Harbor was a means to an end for the Empire of Japan, a tactic which evolved from the strategy process. The strategy process involves four fundamental steps: determination of national objectives, development of a grand strategy which supports these national objectives, formulation of a military strategy which employs the military instrument of power, and execution of the battlefield strategy or tactics required to accomplish the military strategy. Ultimately, battlefield strategy and tactics support the national objectives from which they evolve. The attack on Pearl Harbor, therefore, contributed to the national objectives of the Empire of Japan in 1941 and it is in this context that the strategy process will be analyzed beginning with Japan's national objectives (14:7-8,30).

NATIONAL OBJECTIVES

Japan's national objectives in 1941 were predicated on foreign policy goals regarding the countries economic well-being and national destiny. The Konoye Cabinet established these goals as Japan's national policy in July 1940 when it announced the establishment of a new order in Greater East Asia. The new order, later known as the Greater East Asia Co-Prosperity Sphere, would have united Japan, Manchukuo (Manchuria), and China under Japanese leadership and domination (9:61-62; 12:19). By dominating Asia, the Japanese could have realize their ultimate destiny.

The destiny Japan sought was hegemony over Asia. A destiny preordained by nationalist theories supporting the Japanese belief they were a country set apart from all others by a divine origin. As children of the Sun Goddess, the Japanese were destined to dislodge the white imperialists' yoke and return Asia to Asian (Japanese) control (6:19; 9:48,53). As a consequence, the Japanese looked upon their era of expansion as analogous to the development of the United States and the Greater East Asia Co-Prosperity Sphere as nothing more than a Monroe Doctrine for Asia (9:146; 12:23).

The Co-Prosperity Sphere also supported the economic well-being of the nation and its industrial base. An industrial base which became increasingly dependent on the rest of Asia. Japan's economy flourished during WWI; however, as the western power returned to Asia, the economy began a decline following the war in response to the trade restrictions imposed by the west. The economic situation was further exacerbated by over-population, unemployment, and limited agricultural production (12:19). The Japanese responded by moving into Asia in an effort to secure the raw materials and markets required to sustain their economic well-being and national destiny (9:6-7). The Japanese pursued their national interests by embarking on a grand strategy of expansionism, reference figure 7.

GRAND STRATEGY

Japan's grand strategy depended upon the diplomatic and military instruments of power. The economic instrument, on the other hand, would handicap the Japanese in their pursuit of national security objectives. As the Japanese grand strategy of expansionism evolved, their interests in Asia began to increasingly conflict with those of the western powers.

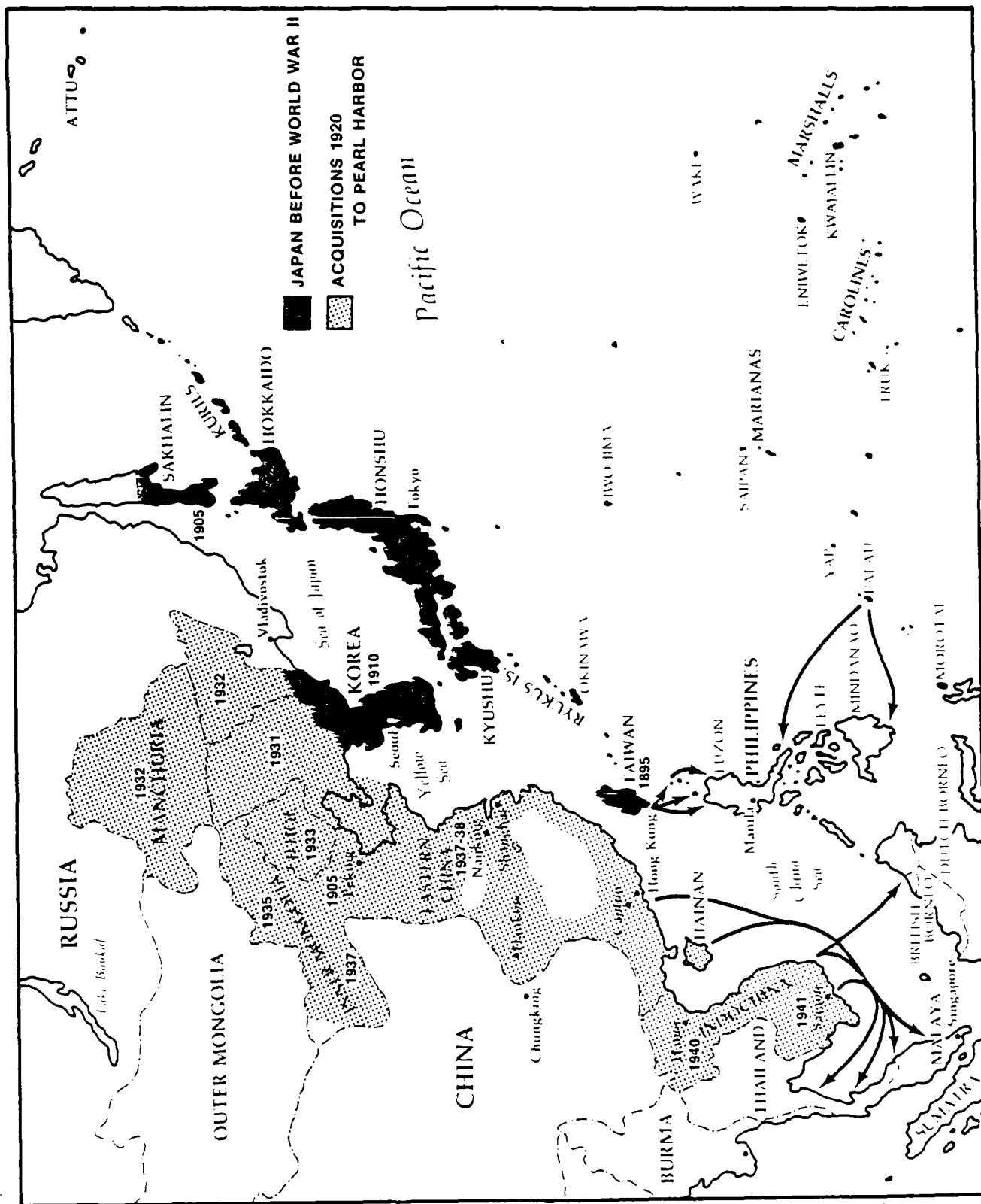


FIGURE 7. GROWTH OF THE EMPIRE OF JAPAN

As this conflict of interests intensified in Asia, the western powers responded by tightening the screws on the Japanese economy. This resulted in further expansion and an exponential increase in the level of the conflict. The economic difficulties which followed WWI precipitated the Japanese initial move into Manchuria in 1928. By 1932 Japan had seized control of the entire region and established the puppet state Manchukuo (9:6-8). The western response to the Manchurian Incident was to place Japan in a closed economic system. This resulted in a further decline of the Japanese economy rather than the improvement sought by the expansion into Manchuria. Eventually, Japan's economic demands even outstripped what Manchuria could provide and the lost European trade had to be made good in eastern Asia. China, therefore, had to be brought into the co-prosperity sphere (6:185).

Japan signed the 1936 Anti-Comintern Pact with Germany before moving into China. Although the Anti-Comintern Pact was aimed ostensibly at halting the spread of communism in Asia, it also served to neutralize the Soviet Union prior to the Japanese move into China. The Japanese invasion of China eventually stalled in 1939, Japan attempted to resolve the stalemate by cutting the Chinese resupply lines. They hoped to do this by forcing an impotent Vichy government to allow Japanese troops into northern Indochina in July 1940. The Japanese anticipated this move would apply enough pressure on the British to stop their support of China over the Burma Road. However, this move had little effect on the British and only caused the United States to respond with a series of trade embargoes which further handicapped the Japanese economy. Japan hoped to check American opposition through the Tripartite Pact signed with Germany and Italy in September 1940. However instead of attaining the expected results, American opposition increased and came to

a head in July 1941 when the Japanese forced the Vichy government to establish a Franco-Japanese Protectorate in Indochina. The United States responded by freezing all Japanese assets and cutting off all trade with the Empire of Japan (7:25-42; 10:59-64).

The freeze had a profound impact on the Japanese as the United States was their major source of oil. The oil embargo posed a significant threat to Japan's survival interests as a maritime power. At the time the oil embargo was imposed, the Imperial Navy's oil reserves would have sustained only limited operations for a period of two years (5:169). The militarist dominated government responded by directing their diplomats to persuade President Roosevelt to lift the oil embargo by 30 November 1941. The diplomats were given little with which to bargain due to the ultranationalistic fervor within Japan and the government eventually turned toward a military strategy as the means of satisfying their immediate survival interests (9:89-148).

MILITARY STRATEGY

The Navy developed a military strategy which provided Japan with all the vital resources she required to be self-sufficient. The strategy entailed the conquest of the Philippines, Southeast Asia, and the Dutch East Indies (15:1-2). Japan's strategy was maritime in origin and dependent on a strong navy. The powerful Japanese Navy resulted from the military build-up sponsored by the Emperor Meiji in the late 1800s. This build-up was linked to basic survival goals in existence following Japan's emergence in 1853 (4:8-9; 10:19).

French engineers assisted the Japanese in their naval build-up by setting up a dockyard at Yokosuka. The French spent ten years training the Japanese

how to construct Western warships. Additionally, by 1897 the Japanese were ordering warships at a rate only exceeded by the British and by the end of WWI Japan had advanced to a position of dominance in East Asia (4:8-9; 14:67-69). The Washington Treaty Concerning the Limitation of Naval Armament in 1921 intended to rectify this new balance of power in Asia and imposed a system of limitation on the world's chief navies. The treaty set a capital-ship ratio on the American, British, and Japanese navies of 5:5:3 and declared a ten year freeze on ship construction (8:11-12). The treaty lapsed in 1936, largely due to Yamamoto's efforts during the 1934 London Naval Conference (4:24-27; 7:17). As a consequence, Japan possessed one of the largest navies in the world at the advent of hostilities in 1941. A navy able to accomplish the extensive requirements of the Southern Operation.

The Southern Operation depended on the Navy's ability to transport Army troops, hold Allied warships at bay, and keep Japan's sea-lanes open. The Japanese thrust southward was against numerous widely-separated objectives several thousand miles from the homeland, reference figure 7. The military strategy required Yamamoto to secure the flanks of the Combined Fleet while committing his major forces to the Southern Operation (5:12). The north-western flank was secured by the Soviet-Japanese Neutrality Treaty of April 1941 and the German offensive in European Russia (6:212-213; 9:94). The following strategy secured the remaining flanks while capturing the southern objectives.

The Combined Fleet accomplished this task by first moving the Third Fleet against the Philippines, Borneo, and Celebes. While the Third Fleet's 100 ships maneuvered for the invasion of Luzon, the Eleventh Air Fleet based on Formosa attacked MacArthur's air forces at Clark and Nichols Field. As the

Third Fleet closed in on Luzon, the Second Fleet and the Southern Expeditionary Fleet swung southward in a feint toward Bangkok. These two invasion forces were headed for Malaya in a three-pronged assault against Singora, Patani, and Kota Bharu. After landing at these strategic points, Japanese troops drove down the jungle-covered peninsula toward Singapore. With the fall of Singapore the communications lines to Australia were severed and the floodgates to the Dutch East Indies were flung wide open (5:224).

Aside from these landings on Malaya, the main body of the Second Fleet was to destroy the enemies' fleet and air power in the Philippines, Malaya, and the Dutch East Indies; act as surface escort and support the landing of Army forces in the Philippines, the Dutch East Indies, and Thailand; prepare for the invasion of Timor and Burma; and destroy enemy surface traffic in Southeast Asia. As the Imperial Navy's ships plowed through the South China Sea, the Twenty-second Air Flotilla based in Saigon provided air cover (5:224-225,433; 9:238). The Southern Philippines Support Force, part of the Third Fleet, provided its own air cover with Carrier Division Four (Ryujo) as it maneuvered toward Davao to shut the back door to the Philippines and open the eastern gateway to the Indies (5:435).

Concurrently, the Fourth Fleet was able to add two more unsinkable aircraft carriers to Japan's island bases and bar the United States from Japanese waters by seizing the islands of Guam and Wake. America's unsinkable aircraft carrier at Midway also came under siege by a small neutralization force of three ships. Their mission was to bombard and neutralize the air base and to divert American attention by decoying reconnaissance flights. This would ensure the safe return of the Nagumo force, while other elements of the Combined Fleet protected flanks closer to home (5:225,436).

The China Area Fleet continued to operate in Chinese coastal waters by destroying local enemy units, cooperating with the Army in the capture of Hong Kong, and protecting Japanese surface traffic. Much closer to home, in the Inland Sea, the main body of the Combined Fleet under Yamamoto's direct command protected the homeland and any of the Japanese flanks requiring reinforcement (5:436). All this activity did not go unnoticed.

American Intelligence was well aware of the southern movements of Yamamoto's Combined Fleet through radio transmissions and visual confirmation; however, they were unaware of his final flanking maneuver. The attack on Pearl Harbor secured the eastern and northern flanks of the Southern Operation with one sudden and decisive blow. The battlefield strategy at Pearl Harbor took advantage of the element of surprise and the offensive power of naval aviation (5:28,439-441,464).

BATTLEFIELD STRATEGY/TACTICS

The tactics used over Oahu on the morning of 7 December 1941 exemplified the principles of air power espoused by Yamamoto and Genda. As the Japanese attackers dominated the skies over Oahu, they reaped the benefits of two cardinal principles of war, offense and surprise. Their attack was divided into two waves. Although the primary target was the Pacific Fleet, each wave concentrated a portion of its attack force on American air power. This not only provided air-superiority during the battle but also reduced the enemy's ability to retaliate (5:28).

Zeros and dive bombers provided air-superiority during the first wave's attack by neutralizing the air bases at Ford Island, Hickam, Ewa, Wheeler, and Kaneohe. While Zeros and high-level bombers provided the second wave

with air-superiority through follow-on attacks on these same airfields as well as Bellows Field on the northeast coast of Oahu. With the attainment of air-superiority, the Japanese were able to carry out an effective strike against the American Pacific Fleet anchored in Pearl Harbor (5:501-539).

The first wave's attack on Pearl Harbor was accomplished by torpedo and high-level bombers. The success of the torpedo bombers was the key to mission effectiveness for the Japanese (5:508). The torpedo bombers concentrated on ships moored singularly or outboard vessels of those moored in tandem, reference torpedo bomber attack plan figure 3. Meanwhile the high-level bombers concentrated their attack on the inboard ships or other major targets of opportunity, reference high-level bomber attack plan figure 5. The dive bombers of the second wave conducted a mop-up action using lighter 250 kilogram bomb loads (5:501-539). The final outcome was an historic Japanese victory.

The Japanese victory was achieved by taking advantage of the principles of offense and surprise through the application of airpower. Yamamoto had finally demonstrated the awesome offensive power of the aircraft carrier and her arsenal of destruction (5:25).

Chapter Four

PRINCIPLES OF WAR

The principles of war are generally accepted truths which have been proven successful in the art and science of conducting war. War is a highly complex endeavor; therefore, the relative importance of each principle will vary with the situation. Likewise, the principles of war are interrelated and interacting elements of warfare. To facilitate a greater appreciation of their significance, Pearl Harbor will be analyzed in terms of the principles of war as identified in AFM 1-1. Each principle will be covered through an analysis of their application by the Japanese at Pearl Harbor (13:2-4 - 2-5).

OBJECTIVE

The objective defines the scope and nature of military operations and what the operations are intended to accomplish. The ultimate objective is to either neutralize or destroy the enemy's armed forces and his will to fight (13:2-5). The objective at Pearl Harbor was to neutralize the U.S. Pacific Fleet and secure the northern and eastern flanks of the Southern Operation (4:59-60). The Japanese were successful in attaining these objectives in light of their initial successes at the outset of WWII. However, they were unsuccessful in destroying the will of the American people to fight (5:582).

Well aware of the United States' enormous industrial potential, Yamamoto not only sought to secure the Southern Operation with the attack on Pearl Harbor but also to break the will of the American public in one decisive

blow. He believed this would help Japan win an early settlement to the war. Yamamoto felt Japan would surely lose the war with the United States if a protracted conflict were allowed to develop (5:16). Regrettably for the Japanese, Admiral Nagumo was unaware of Yamamoto's broader objectives for the Hawaiian Operation. Even though Nagumo's force was unable to engage the American carriers, he felt confident the objectives of the Hawaiian Operation had been satisfied (5:544-546). Ironically had the scope of the Pearl Harbor attack plan been as broad as Yamamoto had intended or had Nagumo shown some initiative in pursuing an even greater victory, the ultimate objective may have been accomplished. As it was, Pearl Harbor only served to unify the American people and propel the United States into World War II (5:582-583).

OFFENSIVE

The principle of offensive is to act rather than react. The offensive allows for the selection of attack priorities, as well as the time, place, and weaponry necessary to achieve objectives (13:2-6). Yamamoto's Hawaiian Operation effectively demonstrated the offensive principle. By taking the offensive, the Japanese were able to acquire the intelligence needed to select the time and place of attack, prioritize their targets, and surprise their ill-prepared enemy. They were also able to procure the Model II torpedo, designed specifically for the shallow waters of Pearl Harbor, and refine their high-level bombing techniques (5:161-163,321,332-333). The offensive enabled Japan to achieve an impressive string of one-sided victories at the outset of the Pacific conflict (4:139).

SURPRISE

Surprise is the attack of an enemy at a time, place, and manner for

which the enemy is neither prepared nor expecting an attack. Surprise allows the attacking force to seize the initiative while forcing the enemy to react (13:2-6). Surprise was essential to the attack on Pearl Harbor. It allowed the dive bombers and Zeros to gain and maintain air-superiority throughout the battle. Surprise also enabled the torpedo bombers to complete their devastating first run before the enemy could bring his antiaircraft guns to bare. Surprise was the difference between victory and defeat. Genda knew surprise would be the key to success when he submitted his draft plan to Onishi. Surprise was a tradition in Japanese military history and without it Genda felt the entire plan should be scrubbed (5:25).

Surprise was attained through secrecy, deception, intelligence, and timing. Secrecy was maintained by limiting the access of personnel to the planning of the Hawaiian Operation (5:28). Strict radio silence during the long voyage to Oahu further ensured surprise and accentuated the deception techniques carried on in Tokyo and through the naval radio station on Kyushu (5:338; 15:29). Intelligence contributed to surprise by providing the information which led to the selection of the northern Pacific route (5:219). The timing of the attack allowed Nagumo's task force to approach Oahu under the cover of darkness, secure from detection by either airborne evening reconnaissance or surface vessel traffic. Consequently, Fuchida's airmen were airborne long before daylight reconnaissance aircraft could have located the task force north of Oahu.

SECURITY

Security is taking continuous, positive measures to prevent surprise and preserve freedom of action (13:2-6). The Japanese achieved security through

secrecy, deception, timing, posturing, disguise, operational security, and maneuver. Secrecy, deception, and timing have already been addressed in preceding principles. The posturing of forces for the Southern Operation caused American intelligence to focus their attention on the Japanese move toward Southeast Asia and not Hawaii (5:353,439-441). The posturing of these forces more so than the superficial negotiations in Washington helped disguise the Japanese intentions toward Hawaii and the overall security of the task force as it approached its objective. The strict radio silence observed by the task force, beginning with the rendezvous in Hitokappu Bay, denied the enemy information on the location and possible intentions of the task force (5:365,390,417). The fleet blackout enroute Oahu and the signal code change on the evening of 30 November were further enhancements to operational security (5:439-440). The selection and dry run of the northern route reinforced the belief Nagumo's fleet would avoid enemy detection (5:219; 9:166). The significant intelligence effort on Oahu enabled the Navy to take advantage of maneuver and timing as well as the targeting information provided in response to Naval Intelligence's "bomb plot" message of 24 September 1941 (5:249,256-257). All these factors contributed to denying the enemy information on the location, strength, and intentions of the task force and ensured its success.

MASS AND ECONOMY OF FORCE

Economy of force permits the use of appropriate mass at the time and place required without wasting resources on secondary objectives (13:2-7). Mass and economy of force were the key issues surrounding the Naval General Staff's opposition to the Hawaiian Operation. The Naval General Staff felt the Southern Operation was essential to Japan's survival as a world power and

all Navy assets, in mass, should support Japan's move to the south (5:296). If the Southern Operation provoked the intervention of the democracies, the Japanese would turn to the Great All-Out Battle doctrine. Yamamoto abhorred this defensive posture (5:12). He believed the Southern Operation could be accomplished using numerous small task forces supported by land-based naval aviation. Meanwhile, a massive attack on Pearl Harbor would neutralize the U.S. Pacific Fleet and ensure the unopposed mission accomplishment of the smaller task forces (5:183-184). Yamamoto's threat of resignation brought the Naval General Staff around and the Japanese were able to use mass at Pearl Harbor and economy of force in the Southern Operation (5:297-303).

MANEUVER

Effective use of maneuver can maintain the initiative, dictate the terms of engagement, retain security, and position forces at the right time and place to execute surprise attacks (13:2-7). The Japanese effectively used maneuver in their northern approach to Oahu. The northern route devised by Genda kept the task force out of the normal shipping lanes and provided a means of securing the fleet from detection by either enemy or neutral shipping (5:219). The Naval General Staff war games reinforced the value of the northern route as did the Taiyo Maru's trial run of Nagumo's course in October 1941 (5:226-231, 313-316; 9:166).

TIMING AND TEMPO

Timing and tempo is the principle of executing military operations at a point in time and at a rate which optimizes the use of friendly forces and which inhibits or denies the effectiveness of enemy forces (13:2-8). The Japanese attack on Pearl Harbor provides an excellent example of the use of

timing and tempo. The Japanese controlled the action through effective use of surprise, security, mass, and maneuver. Intelligence enabled the Japanese to execute a cloaked run across the north Pacific to a weekend, pre-dawn launch of 351 aircraft from a force of six carriers. The two attack waves employed such force and surprise the enemy was only able to offer minimal resistance. Thorough intelligence aided the Japanese victory at Pearl Harbor; however, the lack of post-strike intelligence prevented the attainment of an even more decisive victory. A victory which would have forced the American Pacific Fleet back to the West Coast (5:549). Nagumo's reluctance to order a second strike was based on a lack of information. Information necessary to determine the extent to which Oahu could be defended or the Americans could launch a counterstrike and the location of the American carriers (5:368,542). Ignorant of the tremendous advantage the first strike had created, Nagumo turned his back on a once in a life time opportunity and returned to Japan.

UNITY OF COMMAND

Unity of command is the principle of vesting appropriate authority and responsibility in a single commander to effect unity of effort in carrying out an assigned task (13:2-8). Unity of command was followed throughout the Hawaiian Operation. Admiral Nagumo was selected Commander in Chief of the Pearl Harbor Task Force and as such was responsible for conducting the Hawaiian Operation and achieving its mission objectives (5:101-108). Even when Nagumo elected to return to Japan following the significant advantage created by the first strike, Yamamoto refused to violate this principle and countermand Nagumo's decision (4:123). Unity of command remained intact.

SIMPLICITY

Simplicity promotes understanding, reduces confusion, and permits ease of execution in the intense and uncertain environment of combat (13:2-8). By the time Fuchida's attack force launched on the morning of 7 December, every airman had virtually memorized the air order of battle. Even when Fuchida's flare signals caused a brief moment of confusion, members of the attack force quickly recognized what Fuchida had intended and initiated the attack as planned (5:503). Preparation was the key to the attack force's total awareness and understanding of the air order of battle. Preparation which began in June 1941 at Kagoshima Bay, when torpedo and high-level bombing techniques were refined under the supervision of Genda, Murata, and Fuchida. The war games sponsored by the Naval General Staff and Combined Fleet further refined the tactics to be used as well as brought more of the key players into the Hawaiian Operation's inner circle (5:226-231). The dress rehearsals conducted between 4 and 7 November 1941, allowed the participants to apply their tactics and once again expanded the inner circle (5:327-328). All the participants within Nagumo's task force were finally informed of the nature and scope of the Hawaiian Operation during the briefings and study sessions held in Hitokapu Bay (5:373-388). The Japanese extensive preparations ensured simplicity.

LOGISTICS

Logistics is the principle of sustaining both man and machine in combat by obtaining, moving, and maintaining warfighting potential (13:2-9). Logistics was the primary reason the Japanese chose to engage in the Southern Operation. An operation which precipitated the attack on Pearl Harbor. The

American embargoes against Japan had taken their toll and in the fall of 1941, Japan could not afford to play a diplomatic waiting game with the United States. Japan's dwindling oil reserves necessitated a move south for oil and other vital raw materials (12:19). The Southern Operation became a necessity and along with it Pearl Harbor. Logistical factors also had an operational impact on the execution of the Hawaiian Operation. Procurement of the Model II torpedo and enroute refueling were factors affecting the planning and execution of the Hawaiian Operation. The shallow waters of Pearl Harbor made the Model II torpedoes essential to the mission effectiveness of Murata's torpedo bombers (5:321). Enroute refueling was another key element of the attack. The limited operational range of a majority of the task force's ships necessitated coordination of waivers to Naval Ministry regulations and development of a new refueling technique (5:322-324).

COHESION

Cohesion provides the war-fighting spirit and capability of a force to win. It is the cement which holds a unit together through the trials of combat (13:2-9). The men who attacked Pearl Harbor were clearly a cohesive unit. Their cohesion evolved from tradition and national pride. The traditional character of their cohesiveness took root in the Samurai culture which had dominated Japan for centuries (9:14). While their national pride was tied to Japan's destiny and the nationalistic fervor which ran rampant in Japan at the time. A fervor which would ensure a politicians assassination for the mere semblance of supporting the western imperialists (12:22). Nagumo's men required little motivation in attacking their chief antagonist, the United States (5:388).

Chapter Five

SEMINAR DISCUSSION QUESTIONS

The following seminar discussion questions are provided as an aid to any ACSC course officer preparing a seminar on Pearl Harbor or Admiral Isoroku Yamamoto. They are intended to promote discussion on the strategy process model and the principles of war. Discussion which will lead to a better understanding of the art and nature of war.

DISCUSSION QUESTIONS

1. Question

How did the Japanese violate the principle of reality in their strategy process prior to the attack on Pearl Harbor?

Discussion

The Japanese made invalid assumptions regarding how the democracies would respond to their expansion onto the mainland of Asia. Their first mistake was to assume they could pressure the British into terminating their support of the Chinese over the Burma Road. When this maneuver failed and resulted in an expansion of U.S. trade embargoes, they felt the United States could be neutralized through the Tripartite Pact with Germany and Italy. The Japanese assumed the United States would avoid supporting Britain in the Atlantic and taking on the Imperial Navy in the Pacific (7:25-42; 10:59-64). Japan's move into southern Indochina in July 1941 proved to be the straw that broke the Empire's back and plunged

Japan into war with the United States (5:169).

2. Question

What was Japan's primary instrument of national power from the beginning of the 20th Century until her attack on Pearl Harbor? Explain why?

Discussion

Japan relied upon its military instrument of power almost exclusively during this period of time. Although the diplomatic instrument augmented Japan's war machine, the military controlled the government and the hearts of the people. The Manchurian Incident provides an excellent example of the military's control over the government. The Kwantung Army, Japan's army force on the mainland, regard itself as the chosen instrument of Japan's manifest destiny on the continent (7:17). In this light, the Kwantung Army initiated the Manchurian Incident in 1928 and had complete control of the Chinese province by 1932 (9:6-8). The government eventually recognized the Army's fait accompli and encouraged people to emigrate to Manchuria. When a politician opposed the Manchurian Incident, he was assassinated (12:20). The success in Manchuria led to expansionism and a glorification of militarism and the use of force (7:21,25).

3. Question

Of all the principles of war, which one were the Japanese least efficient in applying at Pearl Harbor and why?

Discussion

The Japanese application of the principle of objective left a lot to be desired. Yamamoto expressed only the limited objectives for the attack on Pearl Harbor to the planners such as Genda and the task force's leader

Nagumo. Thus, the overall success of the Pearl Harbor attack was limited by an incomplete objective and the lack of established secondary objectives. If broader objectives or secondary objectives had been established, Nagumo would have been compelled to take advantage of the opportunity provided by the first strike's success and pursue the ultimate objective of breaking the enemy's will to fight. As it was, Yamamoto attempted to achieve this end through the ill-fated Midway Operation (4:178-179).

4. Question

The Japanese success at Pearl Harbor can be attributed to one key principle of war. Which one was it and why was it the key to victory?

Discussion

Security was the key principle which led the Japanese to success at Pearl Harbor; however, this is not the most obvious answer. Surprise and offensive seem the most obvious choices but there would have been no surprise without the security measures taken by the Imperial Navy. Likewise, offensive action alone cannot guaranty success. This was later proven at Midway, when Yamamoto's Combined Fleet suffered a great defeat while on the offensive. A defeat caused by a lack of security (4:191).

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